

STUDIES IN MEXICAN AND CENTRAL AMERICAN SOLANACEAE

Johnnie L. Gentry, Jr.

Department of Botany

Field Museum of Natural History

The material presented in this paper is for the most part a result of my work on the family Solanaceae for the Flora of Guatemala.

In addition to the collections at Field Museum, I have studied pertinent collections from the New York Botanical Garden, the Missouri Botanical Garden and the U.S. National Herbarium. I wish to thank the curators and other persons responsible for making these materials available for study.

The visits to various herbaria and the preparation of the Solanaceae manuscript were made possible by National Science Foundation grants, GB-7254 and GB-27385, to the Field Museum of Natural History in support of Dr. Louis O. Williams' work on the Flora of Guatemala.

The illustrations were prepared by Miss Marion Pahl.

In Guatemala the Solanaceae are represented by 172 species in 24 genera. Four relatively large genera, Cestrum (24 species), Lycianthes (24 species), Physalis (21 species), and Solanum (61 species) total 130 species and comprise about 75 percent of the species in the family. The large and taxonomically difficult genus, Solanum, contains 35 percent of the total number of species.

ATHENAEA Sendtner, nom. cons.

ATHENAEA CERNUA Donn.-Sm. Bot. Gaz. 48: 297. 1909.
Physalis melanocystis (Robinson) Bitter var. cernua (Donn.-Sm.) Waterfall, Rhodora 69: 99. 1967 (type from near Sasis, Alta Verapaz, Guatemala, Tuerckheim II 2245, US).

MEXICO. Montes de Oca, San Antonio, Hinton et al

14034 (NY); Galeana, Carrizo-El Río, Hinton et al
14689 (NY). BRITISH HONDURAS. El Cayo: Arenal-
Valentin road, Lundell 6181 (US). GUATEMALA. Pe-
tén Parque Nacional, Tun 998 (F); Ceibal, Molina
15849 (EAP, F), Molina 15856 (EAP, F); Río Pasión
y Ceibal, Molina 15833 (EAP, F).

There is no indication that Waterfall studied the type of Athenaea cernua before making his new combination with Physalis melanocystis. It is quite different from that species and represents a very distinctive element in the Mexican and Central American floras. The specimens from British Honduras were filed in the genus Saracha under an unpublished herbarium name attributed to the late Conrad V. Morton, using the specific epithet rubra.

ATHENAEA VIScosa (Schrader Fern. Proc. Amer. Acad. Arts 35: 567. 1900.

Saracha viscosa Schrader, Index Sem. Hort. Acad. Goett. 5. 1832. Physalis schraderiana Bernhardi, Linnaea 13: 361. 1839 (based upon S. viscosa Schrader). Witheringia viscosa Miers, Ann. Mag. Nat. Hist. Ser. II, 11: 92. 1853.

Athenaea macrocardia Standl. & Steyermark. Field Mus. Bot. 22: 375. 1940 (type from below Finca Alejandria, Sierra de las Minas, Zacapa, Steyermark 30004 (F)).

A. T. Hunziker placed A. viscosa in Physalis (as P. schraderiana) in Kurtziana 1: 211-213. 1961.

I have retained both of these species in Athenaea until a more thorough study is conducted on generic delimitations of the two genera. A new generic name may be required or present generic concepts modified to include these Mexican and Guatemalan plants. The lectotype of Athenaea (Witheringia picta Martius) is morphologically different in both corolla and calyx characters from the two species discussed here.

CESTRUM L.

CESTRUM MORTONIANUM J. L. Gentry, sp. nov.

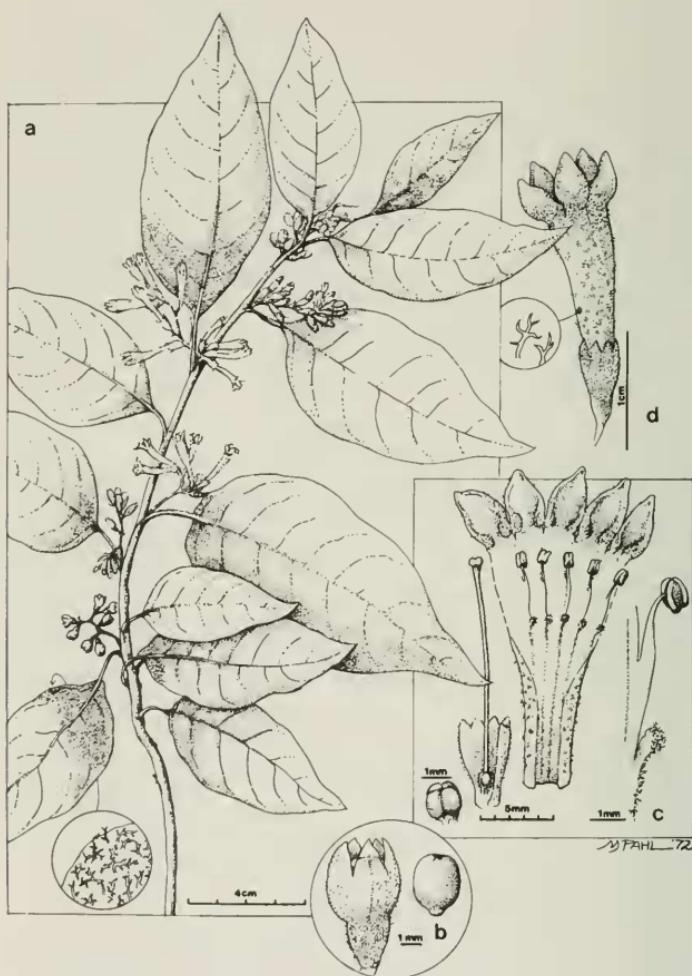
Frutex 2.5-5 m altus. Rami juniores pilis ramosis et simplicibus dense tecti. Folia ovata vel elliptica, 10-25.5 cm longa 3-10 cm lata, apice acuminato vel acuto, basi obtusa vel acuta, facie supera pilis ramosis et simplicibus, infera densius pubescente pilis ramosis et stellatis brevivus stipitatis, petiolis 1-3.5 cm longis. Inflorescentiae axillares, floribus sessilibus. Calyx 5-5.5 mm longus, pilis plerumque ramosis tectus. Corolla pallide viridis, tubo 16-16.5 mm longo, pilis ramosis ad latus exterius tecto. Filamenta 4 mm longa, appendiculata, appendiculis 0.3 mm longis, dense pilosulis, ad tubum corollae supra appendicula adnata. Baccis matueis haud visis.

Shrub 2.5-5 m tall. Younger branches densely covered with branched and simple hairs. Leaves o-
vate or elliptic, 10-25.5 cm long, 3-10 cm wide, the
apex acuminate or acute, the base obtuse or acute,
above with branched and simple hairs, below more
densely pubescent, with branched and short stipitate-
stellate hairs, petioles 1-3.5 cm long. Inflores-
cences axillary, the flowers sessile, the rachis pubes-
cent with branched and simple hairs. Calyx 5-5.5 mm
long, mostly covered with branched hairs, the lobes
deltoid, 0.2-0.5 mm long. Corolla pale green, the
tube 16-16.5 mm long, with branched hairs externally,
the corolla lobes ovate, 4.5-5 mm long. Filaments 4
mm long, glabrous, appendiculate, the appendages
densely pilosulous, entire, 0.3 mm long, the filaments
adnate to the tube of the corolla above the appendages.
Style 15-15.5 mm long. Berry immature.

TYPE. GUATEMALA. San Marcos: barrancos south and west of town of Tajumulco, northwestern slopes of Volcán Tajumulco, 2,300-2,500 m., J. A. Steyermark 36509 (holotype, F).

Quezaltenango: above Santa María de Jesús, about 1,650 m., Standley 67274 (F, US). Chimaltenango: Qui-
saché, in a moist forested barranco, 1,800 m., Standley 61989 (F, US); near Sibajá, about 1,050 m., Standley 62300 (F).

This species is related to *Cestrum lanatum* Mart. & Gal. from which it is distinguished by the longer



CESTRUM MORTONIANUM. A, branch. B, calyx with immature fruit. C, dissected corolla with detail of ovary and stamen. D, corolla with detail of hairs.

and pubescent corolla tube, the relatively straight, appendiculate filaments and the filaments adnate to the corolla tube above the appendages.

EUTHETA Standley

Standley failed to recognize the true affinity of the collections that he referred to this genus. He called them curious solanaceous plants. In 1967 Waterfall stated that Standley was justified in his disposition of Eutheta as a monotypic genus in the Solanaceae. However, the genus proves to be a synonym of Melasma Bergius a member of the Scrophulariaceae. Thieret, Ceiba 8: 94-95. 1961, correctly placed Eutheta in the Scrophulariaceae.

MELASMA PHYSALODES (D. Don) Melch. Notizbl. Bot. Gart. Berlin-Dahlem 15: 122. 1940.

Cacabus hondurensis Donn.-Sm. Bot. Gaz., 56: 60. 1913 (type from Llano de la Puerta near Copán, 900 m, Honduras, Pittier 1828 (US). Eutheta hondurensis Standl. Field Mus. Bot. 8: 325. 1931.

LYCIANTHES (Dunal) Hassler

LYCIANTHES ARMENTALIS J. L. Gentry, sp. nov.

Frutex scandens. Rami graciles, 1-7 m longi, pilis ferrugineis vel flavidis brevibus stipitatis stellaribus tecti, pilis brevibus simplicibus interjectis. Folia plerumque binatim, magnitudine inaequalia, forma similaria, elliptica vel ovato-elliptica vel ovato-lanceolata interdum suborbicularia, supra et subtus pilis brevibus stipitatis stellaribus tecta, subtus dense pubescentia pilis flavidobrunneis, foliis maximis 4-6.5(-14.5) cm longis, 2.5-4.5(-6) cm latis, apice acuto vel acuminate, basi obtusa, petiolis 0.3-1.2 cm longis. Inflorescentiae 3-5 floribus consistentes, pedicellis 1-1.6 cm longis. Calyx 3 mm longus, pilis brevibus stipitatis stellaribus, appendiculis 10 subaequalibus alternatim instructus, appendiculis maioribus 2.5-3.5 mm longis, appendiculis brevior-

ibus 2-2.5 mm longis. Corolla probabiliter alba, limbo 15 mm lato, ad medium lobato. Filamenta longitudine inaequalia, quattuor ex eis 1.5 mm longa, quinta 3 mm longa, antheris 3.5-4 mm longis. Bacca 7-9 mm diam. Semina 2.2-3 mm longa.

Scandent shrub. Branches slender, 1-7 m long, covered with reddish-brown to yellowish, short stipitate-stellate hairs, with short simple hairs intermixed. Leaves mostly in pairs, unequal in size, similar in shape, elliptic or ovate-elliptic or ovate-lanceolate, sometimes suborbicular, with short stipitate-stellate hairs above and below, densely pubescent with yellowish-brown hairs below, the larger leaves 4-6.5(-14.5) cm long, 2.5-4.5(-6) cm wide, the apex acute or acuminate, the base obtuse, the petioles 0.3-1.2 cm long. Inflorescences with 3-5 flowers, pedicels 1-1.6 cm long, short stipitate-stellate pubescent, with a few shorter simple hairs intermixed. Calyx 3 mm long, with short, stipitate-stellate hairs provided with 10 alternately subequal appendages, long appendages 2.5-3.5 mm long, short appendages 2-2.5 mm long. Corolla probably white, sparsely stellate-pubescent externally, the limb 15 mm wide, lobed to the middle, the lobes 3.5 mm long. Filaments unequal in length, four 1.5 mm long, fifth 3 mm long, the anthers 3.5-4 mm long, glabrous or sparsely pubescent abaxially. Style 7.5-8 mm long. Berry subglobose, 7-9 mm in diameter. Seeds 2.2-3 mm long.

TYPE. MEXICO. Quintana Roo: Coba, east of ruins, in advanced deciduous forest, C. L. & A. A. Lundell 7800 (holotype, US; isotypes, F, US).

Campeche: Tuxpeña, Lundell 971 (F, US). BRITISH HONDURAS. El Cayo District: El Cayo, in forest, limestone hillside, Lundell 6126 (US); Mountain Pine Ridge, San Agustín, in marginal forest, base of limestone hill, Lundell 6814 (US). GUATEMALA. Petén: Santa Elena, en orillando el camino para El Remate, a km. 19, lado noroeste del camino, Tun 2200 (F).

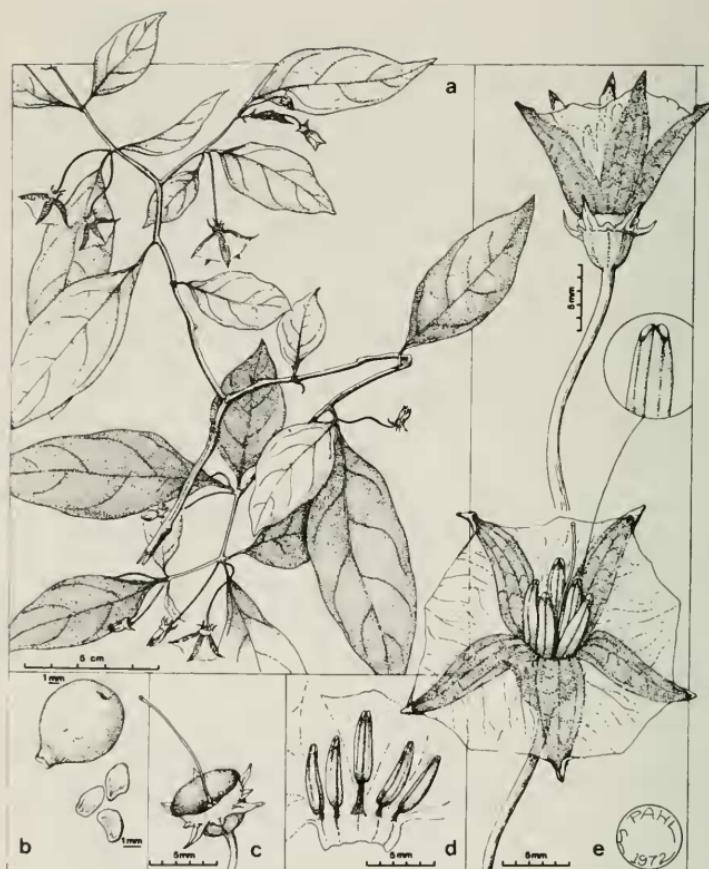
Lycianthes armentalis has been confused in herbaria with L. sideroxyloides Schlecht., a Mexican species. It differs from L. sideroxyloides by its longer calyx appendages, unequal stamens and inflorescences with few-flowers.

LYCIAUTHES CONNATA J. L. Gentry, sp. nov.

Frutex 2-7 m altus. Rami graciles sparse puberuli, pilis simplicibus brevissimis. Folia solitaria vel geminata, plerumque similia forma, magnitudine inaequalia sparse supra et subtus puberula, foliis maximis ellipticis, 7-15(-26.5) cm longis, 3-4(-8) cm latis, apice acuminato, basi attenuata, petiolis 0.3-1(-4) longis, foliis minoribus 4-9 cm longis, 2-3.5 cm latis. Inflorescentiae floribus consistentes, pedicellis gracilibus 2.5-5 cm longis. Calyx 2.5-3 mm longus, appendiculis 10 subaequalibus alternatim instructus, effusis vel admodum reflexis subtus connatis, appendiculis maioribus 2.5-4 mm longis, appendiculis brevioribus 1-2 mm longis. Corolla alba, limbo 2-3 cm lato, vix lobato. Filamenta longitudine inaequalia, quatuor ex eius 1-2 mm longa, quinta 2.5-3 mm longa, antheris 4.5-5.5 mm longis. Bacca 8.5-10 mm diam., appendiculis calycis admodum reflexis. Semina 2-2.5 mm longa.

Shrub 2-7 m tall. Branches slender, sparsely pubescent, with very short, simple hairs. Leaves solitary or in pairs, mostly similar in shape, unequal in size, sparsely pubescent above and below, hairs curved inwards on the veins below, the larger leaves elliptic, 7-15(-26.5) cm long, 3-4(-8) cm wide, the apex acuminate, the base attenuate, the petioles 0.3-1(-4) cm long, the smaller leaves 4-9 cm long, 2-3.5 cm wide. Inflorescences with 1-4 flowers, the pedicels slender, 2.5-5 cm long. Calyx 2.5-3 mm long, glabrous or sparsely pubescent, provided with 10 alternately subequal appendages, the appendages spreading to strongly reflexed, connate below, larger appendages 2.5-4 mm long, shorter appendages 1-2 mm long. Corolla white, glabrous externally, the limb 2-3 cm wide, scarcely lobed. Filaments unequal in length, four 1-2 mm long, fifth 2.5-3 mm long, the anthers 4.5-5.5 mm long. Style 9.5-10.5 mm long. Berry orange, globose, 8.5-10 mm in diameter, calyx appendages strongly reflexed. Seeds 2-2.5 mm long.

TYPE. GUATEMALA. Huehuetenango: wet cloud forests at Cruz de Limón, between San Mateo Ixtatán and Nucá, Sierra de los Cuchumatanes, 2,600-3,000 m, J. A. Steyermark 40828 (holotype, F).



LYCIAUTHES CONNATA. A, branch. B, fruit and seeds. C, calyx with appendages. D, dissected corolla. E, flower and detail of anther.

MEXICO. Chiapas: Santa Rosa, near Escuintla, Matuda 4249 (NY); Siltepec, Matuda 5256 (F); along the ridge above Pueblo Nuevo Solistahuacan, Clarke 324 (F); northeast side of the hill called Matsab, paraje of Matsab, Breedlove 15296 (NY, US); in Colonia Ach'lum, A. Shilon Ton 869 (US); 3 km. north of Pueblo Nuevo, near Clinica Yerba Buena, K. Roe, et al 1222 (US). GUATEMALA. Huehuetenango: Cerro Huitz, between Minanhuitz and Yulhuitz, Sierra de los Cuchumatanes, Steyermark 48639 (F); cloud forest between Xoxlac and Nucapuxlac, Sierra de los Cuchumatanes, Steyermark 48960 (F). Alta Verapaz: forest between Tactic and Cobán, Tuerckheim 3935 (US).

Lycianthes connata is readily distinguished from other species of the genus in Central America by the connate bases of the spreading to strongly reflexed calyx appendages, nearly entire corolla limb and the unequal stamens.

LYCIANTHES CUCHUMATANENSIS J. L. Gentry, sp. nov.

Frutex scandens. Rami juniores, petioli, pedicelli, calyces dense pubescentes pilis ferrugineis sessilibus et brevibus stipitatis stellaribus, ramosis. Folia subcordiaceae, solitaria, lanceolata vel lanceolato-elliptica, 5-10 cm longa, 2-3.5 cm lata, apice acuminato, basi cuneata, facies infera densius stellato-pubescente, petiolis 0.5-1 cm longis. Inflorescentiae 2-4 floribus, consistentes, pedicellis 1 cm longis. Calyx 3.5 mm longus, appendiculis 10 effusis subaequalibus 1.5 mm longis instructus. Corolla probabiliter alba, limbo 1.5 cm lato, lobato ad medium. Filamenta subaequalia, 1 mm longa, antheris liberis, 3.5 mm longis. Bacca circa 7 mm diam. Semina 2.5-3 mm longa.

Scendent shrub. Younger branches, petioles, pedicels and calyces densely pubescent with ferruginous, sessile and short stipitate-stellate and branched hairs. Leaves subcordiaceous, solitary, lanceolate or lance-elliptic, 5-10 cm long, 2-3.5 cm wide, the apex acuminate, the base cuneate, more densely stellate-pubescent below, the petioles 0.5-1 cm long. Inflorescences with 2-4 flowers, the pedicels 1 cm long. Calyx 3.5 mm long, provided with 10 spreading subequal appendages, 1.5 mm long. Corolla probably white, the limb

1.5 cm wide, lobed to the middle, the lobes lanceolate, 4 mm long, densely pubescent with minute stellate hairs externally. Filaments subequal in length, 1 mm long, the anthers free, 3.5 mm long, sparsely pubescent on the lower part abaxially. Style 7 mm long. Berry sub-globose, about 7 mm in diameter. Seeds 2.5-3 mm long.

TYPE. GUATEMALA. Huehuetenango: between Xoxlac and Nucapuxlac, Sierra de los Cuchumatanes, 1,650-2,500 m., J. A. Steyermark 48925 (holotype, F).

GUATEMALA. Huehuetenango: Cerro Huitz between Nimanhuitz and Yulhuitz, Sierra de los Cuchumatanes, 1,500-2,600m., Steyermark 48625 (F).

Lycianthes cuchumatensis has its closest relative in *L. limitanea* (Standley) J. L. Gentry, from which it is distinguished by the lanceolate to lance-elliptic leaves and the smaller fruits, about 7 mm in diameter.

LYCIANTHES GONGYLODES J. L. Gentry, sp. nov.

Frutex 1.5-3.5 m altus. Rami juniores pilis simplicibus brevissimis tecti. Folia solitaria vel geminata, forma similia, magnitudine inaequalia, supra et subtus pilis simplicibus brevissimis tecta, foliis maximis ellipticis vel elliptico-ovatis vel ovatis, 10.5-17.5 cm longis, 3.5-6.5 cm latis, apice acuminate, ad basim brevem attenuata, petiolis 1-2.5 cm longis, foliis minoribus 7-10 cm longis, 3.5-4 cm latis. Inflorescentiae 4-8 floribus consistentes, pedicellis 1-1.5 cm longis. Calyx 3 mm longus, appendiculis 10 gongyloidibus instructus, 0.5 mm longis vel minoribus. Corolla alba, limbo 2 cm lato, lobis 6 mm longis. Filamenta subaequalia 1 mm longa, antheris liberis 5 mm longis. Bacca circa 8 mm diam. Semina 2-2.5 mm longa.

Shrub 1.5-3.5 m tall. Younger branches with very short, simple hairs. Leaves solitary or in pairs, similar in form, unequal in size, with very short, simple hairs above and below, more densely pubescent below, the larger leaves elliptic or elliptic-ovate or ovate, 10.5-17.5 cm long, 3.5-6.5 cm wide, the apex acuminate, the base short attenuate, the petioles 1-2.5 cm long, the smaller leaves 7-10 cm long, 3.5-4 cm wide. In-

florescences consisting of 4-8 flowers, the pedicels 1-1.5 cm long. Calyx 3 mm long, glabrous, provided with 10 knob-like appendages, 0.5 mm long or less. Corolla white, the limb 2 cm wide, lobed to below the middle, the lobes 6 mm long, ciliate and sparsely pubescent externally. Filaments subequal, 1 mm long, the anthers free, 5 mm long. Style 7 mm long. Berry orange, subglobose, about 8 mm in diameter. Seeds 2-2.5 mm long.

TYPE. GUATEMALA. Huehuetenango: Cloud forest 4 miles east of San Mateo Ixtan on road to Barillas, Breedlove 8771 (holotype, F).

GUATEMALA. Huehuetenango: Cloud forest near the place called Kurus Lemun, 4 miles east of San Mateo Ixtatán along road to Barillas, Breedlove 11628 (F, US); wet cloud forest at Cruz de Limón, between San Mateo Ixtatán and Nucá, Sierra de los Cuchumatares, Steyermark 49839 (F).

The affinities of Lycianthes gongylodes are with L. synanthera (Sendtner) Bitter. Lycianthes gongylodes is a montane species (2,600-3,000 meters), leaves more densely pubescent below and with small, knob-like appendages on the calyx, whereas L. synanthera is a plant of the lowlands (rarely above 900 meters), leaves inconspicuously pubescent below, calyx appendages absent, although the calyx is sometimes inconspicuously nerved.

LYCIANTHES LIMITANEA (Standl.) J. L. Gentry, comb. nov.

Solanum limitaneum Standl. Carnegie Inst. Wash. Publ. 461: 85. 1935 (type from Camp 33, in forest shade, 950 m, British Honduras - Guatemala boundary, British Honduras, Schipp S-681, F).

GUATEMALA. Izabal: vicinity Exmibal, Camp 1 (Sepos), northwest of Lake Izabal, Jones & Facey 3402 (F, NY, US); Huehuetenango: Cerro Chiblac, between Ixcán and Finca San Rafael, Sierra de los Cuchumatares, Steyermark 49458 (F, US).

This species formerly placed in Solanum has the calyx and inflorescence typical of Lycianthes. It is known only from fruiting specimens.

SOLANUM L.

SOLANUM COBANENSE J. L. Gentry, nom. nov.

Cyphomandra aculeata Donn.-Sm. Bot. Gaz. 57: 423.
1914 (type from near Coban, Alta Verapaz, Guatemala,
Lehmann 1334 (US)).

GUATEMALA. Alta Verapaz: Mountains east of Tactic,
on road to Tamahú, Standley 71326 (F); Fansamala,
Tuerckheim s.n. (US), Donn.-Sm. 746 (US). Zacapa:
between Cerro de Honos and upper slopes of Monte Vir-
gen, Steyermark 42873 (F).

This very distinctive species was originally de-
scribed as a species of Cyphomandra and later placed
under Solanum purulense in herbaria. The name, S. acu-
leatum, is occupied.

SOLANUM MOLINARUM J. L. Gentry, sp. nov.

Frutex scandens. Rami graciles, pilis simplici-
bus brevissimis instructi, aculeis numerosis brevi-
bus recurvatis. Folia imparipinnata, 8-20 cm longa,
supra et subtus pilis simplicibus brevissimis tecta,
petiolis 1.5-4 cm longis, foliolis 3-5 lanceolatis
vel lanciolato-ovatis, 1.2-8 cm longis, subtus aculeis
brevibus recurvatis praesentibus, apice acuminato.
Inflorescentiae cymatosae, laterales, paniculatim dis-
positae, pedunculis 3-5.5 cm longis, pedicellis 7-8.5
mm longis. Calyx 2-2.5 mm longus, inermis. Corolla
alba, limbo 12 mm lato, lobis 4.5 mm longis. Fila-
menta longitudine inaequalia, quattuor 1.5 mm longa,
quinta 2.5 mm longa, antheris 3.5-4.5 mm longis. Bac-
ca 2.2-2.8 cm diam. Semina 3.5-4.5 mm longa.

Scandent shrub. Branches slender, with very
short, simple hairs, armed with numerous short re-
curved prickles. Leaves odd-pinnate, 8-20 cm long,
with very short, simple hairs above and below, the
petioles 1.5-4 cm long, leaflets 3-5, lanceolate or
lance-ovate, 1.2-8 cm long, armed with prickles be-
low, the lowermost pair of leaflets reduced in size,
the terminal leaflet larger than the lateral ones
and often lobate, the apex acute. Inflorescences
cymose, lateral and internodal, paniculately disposed,

few-flowered, the rachis puberulent, the peduncle 3-5.5 cm long, puberulent and armed with prickles, the pedicels 7-8.5 mm long, unarmed, puberulent. Calyx 2-2.5 mm long, glabrous, unarmed, the lobes 1-1.2 mm long, rounded and somewhat fleshy. Corolla white, the limb 12 mm wide, the lobes 4.5 mm long. Filaments unequal in length, four 1.5 mm long, fifth 2.5 mm long, the anthers 3.5-4.5 mm long. Style glabrous, 5 mm long. Ovary glabrous. Berry globose, mottled with light and dark green, 2.2-2.8 cm in diameter. Seeds 3.5-4.5 mm long.

TYPE. HONDURAS. Comayagua: edge of Humuya River bank, vicinity El Edén, Comayagua Valley, 500 m, A. & A. R. Molina 24532 (holotype, F; isotype, EAP).

GUATEMALA. Jalapa: near Jalapa, 1,480 m, Keller-
man 7052 (F). Zacapa: roadside, Gualán 200 m, Deam
6375 (US); along road between Agua Blanca and Cumbre
de Chiquimula, 350-500 m, Standley 74426 (F). Chi-
quimula: between Ramírez and Cumbre de Chiquimula, on
road between Chiquimula and Zacapa, 400-600 m, Stand-
ley 74557 (F, US).

These plants have been confused in herbaria with *S. wendlandii* Hooker f. *Solanum molinarum* differs from *S. wendlandii* by its smaller white corolla, the corolla limb lobed to below the middle, smaller anthers and the pubescent branches, leaves and inflo-
rescences.

VALERIOA Standl. & Steyermark.

Standley and Steyermark were in doubt about the family position of this genus but felt that there was a closer relationship with the Solanaceae than with either the Verbenaceae or Scrophulariaceae. However, the genus belongs to none of these families. Cuatrecasas, Field Mus. Bot. 27 (2): 98, 100. 1951, recognized the true affinity of *Valerioa* and placed it as a synonym of *Peltanthera* in the Loganiaceae, also see Leeuwenberg, Acta Bot. Neerl. 16: 143-146. 1967 for further discussion.

PELTANTHERA FLORIBUNDA Bentham & Hooker, Gen. Pl.

2: 797. 1876.

Valerioa costaricensis Standl. & Steyermark. Flora of Costa Rica, Field Mus. Bot. 18: 1098-1099. 1938 (type from Calera, Rio Jesus, Santiago de San Ramon, Costa Rica, Brenes 6700, F).

WITHERINGIA L'Heritier

WITHERINGIA PHYSOCALYCIA (Donn.-Sm.) J. L. Gentry, comb. nov.

Brachistus physocalycius Donn.-Sm. Bot. Gaz. 40: 8. 1905 (type from Cubilqüitz, Guatemala, Tuerckheim 8553 (US). Athenaea physocalycia Standl. & Steyermark. Field Mus. Bot. 23: 18. 1943.

GUATEMALA. Petén: forest between Finca Yalpemech, along Río San Diego and San Diego on Río Cancuen, Steyermark 45320 (F); Alta Verapaz; Montaña Yxocubvain, 2.5 miles west of Cubilquitz, Steyermark 44986 (F); along Río Icvolay, 8-10 miles northwest of Cubilqüitz, Steyermark 45067 (F, US); Cubilqüitz, Tuerckheim II 815, Donn.-Sm. 8715 (US).

A. T. Hunziker placed this species in Acnistus in herb. in 1962, but he did not formally publish the combination. The affinities of this species appear to be closer to Witheringia than Acnistus. This is one of the problems to be resolved on the proper delimitation of these genera.